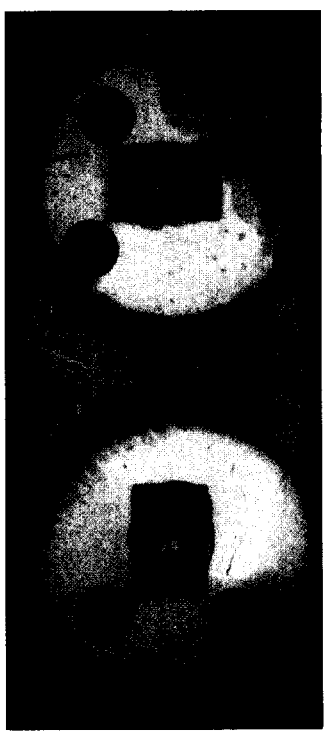
D-B Research GaAs Successes

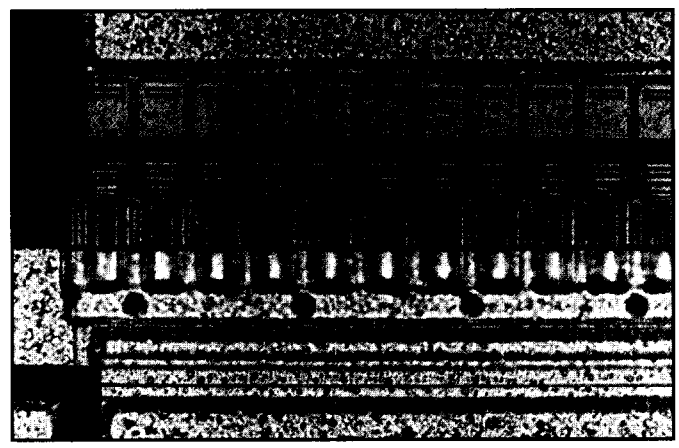
The Daimler-Benz Research Centre in Ulm, Germany, reports a new type of GaAs mixer diode – see photo. These are for contact-free automotive sensors systems and radiometric application in guidance and steering. The GaAs heterostructures incorporate "nanometre layers with indium at the surface" – this improves characteristics whilst keeping manufacturing costs low. They report that the diodes "within a short time, these new structures left the confines of R&D to bring about very favourable results in the product sector."

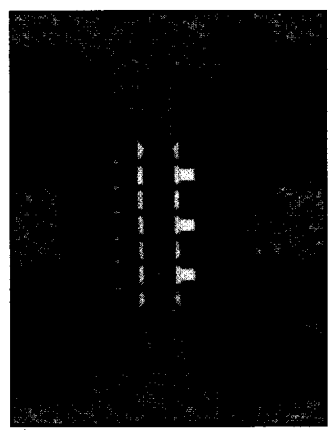


D-B has considerable interest in III-Vs for automotive and related applications. The company has also developed a range of FET-based devices – see photo – suitable for sensing and other applications particularly within the severe environments in or around engine compartment.

Another key development from the D-B Research Centre are miniature radar sensor heads – see photo. These avalanche diodes are arranged perpendicularly allowing simultaneous measurement of speed and distance by means of dual frequency radar.

The sensor consists of a silicon chip a few mm across mounted on a round transistor package. The high frequency circuitry utilises silicon mm-wave IC technology developed by Daimler-Benz. Finally,





D-B recently released news of its work in Si/SiGe HBTs – see photo – whereby a world record high frequency of 160 GHz has been measured.

The devices have advantages over III-Vs insofar as they have a robust natural oxide coating and higher thermal conductivity and efficiency. Applications foreseen for these devices include cellular radio.

■ *Contact: Burkhard Jarisch, Daimler-Benz, tel/fax: [49] 711 17 93271 / -94365. Email: 100106.566@compuserve.com*

H-P Prototypes FP/VCSEL Transceivers for Fibre

The Hewlett-Packard Co. Palo Alto, CA, USA, has successfully prototyped a combination of fibre optic transceiver modules and compatible transceiver IC that will provide a complete physical-layer interface for Gb/s Ethernet LANs with link lengths of up to 2 km.

HP's Gbit Ethernet physical-layer solutions for developers of network interface cards (NIC) will include transceiver modules using 850 nm VCSEL technology for shorter distances at lower cost and 1300 nm Fabry-Perot (FP) laser technology for longer link lengths. In addition, the solution set offers a discrete, fully integrated IC transceiver that incorporates serialize/deserialize functionality for Gbit Ethernet transmission and reception and operates from a single +3.3 V power supply. Prototypes of the 1.25 GBd 1300 nm

Toshiba SMD LEDs

Toshiba's line-up of visible surface mount device (SMD) LEDs consists of 18 SMD diodes available in both flat lens and dome lens types. It is "the brightest SMD LEDs offered in the industry today", it is claimed, with up to 450 mcd typical at 555 to 660 nm - the devices come in a range of colours green to red.

The packaging of the SMDs is one of the smallest offered at 2.0 (L) x 1.25 (W) x 1.1 (H) mm; they also feature a low power consumption of 1.75 to 2.15 forward voltage. Due to the high brightness (TOSbright) of the diodes, they are mainly used in backlighting applications such as cellular and cordless phones.